CLAIMS

What is claimed is:

SUBAD

1.   A method for row version differentiation
in a database management system comprising:

identifying a versioned table to said database;

creating a logical primary key comprising a
prescribed number of columns in the versioned table, the
logical primary key being created in a physical primary
key of the versioned table;

defining at least one column of the physical
primary key as a version effective reference value;

deriving version differentiation criteria
information from a version differentiation predicate
included in a request submitted by a database user, the
version differentiation predicate including a name of the
versioned table defined to a database, a target effective
status, and a target value for version differentiation
processing; and

retrieving rows of the versioned table that
satisfy the version differentiation criteria derived from
the version differentiation predicate by comparing the
effective reference values of the versioned table with
the version differentiation criteria.

2.   The method for version differentiation of
Claim 1 wherein said version effective reference value is
a version effective start value, the method for version
differentiation further comprising:

identifying of a version effective end value
that does not participate in said physical primary key of
said versioned table;

said retrieving of rows from the versioned
table including comparing the effective end values of the

versioned table with the version differentiation criteria.

3. The method for version differentiation of Claim 2 further comprising:
defining an effective window for each row of the versioned table as a function of the effective start value and the effective end value for each row in the versioned table; and
validating the effective window for one row of the versioned table to ensure that the effective window for the one row of the versioned table does not overlap with effective windows for other rows of the versioned table having logical primary keys matching the logical primary key for the one row of the versioned table.

4. The method for version differentiation of Claim 1 further comprising:
identifying to said database management system a referential constraint specifying as a parent said versioned table; and
ensuring that rows exist in the versioned table such that the values of their logical primary keys correspond to the values of the columns of a dependent table identified in the referential constraint for an existing row of the dependent table.

5. The method for version differentiation of Claim 4 wherein said version effective reference value is a version effective start value, the method for version differentiation further including:
identifying a row of the dependent table during the definition of said referential constraint for use as a referential constraint effective start value; and

comparing said referential constraint effective
start value and said versioned effective start value.

6. The method for version differentiation of
5 Claim 5 further including:
identifying a row of the dependent table,
during the definition of said referential constraint,
for use as a referential constraint effective end value;
and
10 comparing said referential constraint effective
start value to said versioned effective start value and
said effective end value.

7. The method for version differentiation of
15 Claim 6 further comprising:
defining a referential constraint effective
window for each row of the versioned table as a function
of the referential constraint effective start value and
the referential constraint effective end value for each
20 row of the versioned table; and
validating the referential constraint effective
window for one row of the versioned table to ensure that
the referential constraint effective window for the one
row of the versioned table does not overlap with the
25 referential constraint effective windows for other rows
of the versioned table having logical primary keys
matching the logical primary key for the one row of the
versioned table.

30 8. A method for row version differentiation
in a database management system comprising:
identifying a versioned table to said database;
creating a logical primary key, comprising a
prescribed number of columns in the versioned table, the

logical primary key being created in a physical primary key of the versioned table;

defining at least one column of the physical primary key as a version effective reference value;

5 deriving version differentiation criteria information from a version differentiation predicate included in a request submitted by a database user, the version differentiation predicate including a name of the versioned table defined to a database, a target effective

10 status, and a target value range as defined by a target start value and a target end value that are included in said version differentiation predicate; and

retrieving rows of the versioned table that satisfy the version differentiation criteria derived from

15 the version differentiation predicate by comparing the effective reference values of the versioned table with the version differentiation criteria.

9. The method for version differentiation of

20 Claim 8 further comprising:

validating said target value range for one row of the versioned table to ensure that target value range for the one row of the versioned table does not overlap with the target value ranges for other rows of

25 the versioned table having logical primary keys matching the logical primary key for the one row of the versioned table.